

IN THE CLAIMS:

Please cancel Claims 2 to 4, 11 to 15, 17, and 18 without prejudice to or disclaimer of the subject matter presented therein. Please amend the claims as shown below.

1. (Currently Amended) A method of detecting a nucleic acid, comprising the steps of:

(1) preparing a single-stranded nucleic acid having plural partial and sequential base sequences to be detected (A-strand) and a single-stranded nucleic acid having a base sequence complementary to a base sequence of the A-strand (B-strand);

(2) preparing nucleic acids as primers each having one of the plural base sequences to be detected, immobilizing the respective primers independently in separate regions on a substrate, and preparing a primer array in which the respective base sequences to be detected are distributed in the primer-immobilized regions;

(3) preparing a nucleic acid having a sequence complementary to a partial and sequential base sequence within the region between a 3'-end of the A-strand and the base sequence to be detected which is located nearest the 3'-end as a primer for elongating the B-strand and a nucleic acid having a sequence having a partial and sequential base sequence within the region between a 5'-end of the A-strand and the base sequence to be detected which is located nearest the 5'-end as a primer for elongating the A-strand;

(4) performing PCR reactions using the A-strand and B-strand as templates, and using the primers immobilized on the substrate, the primer for elongating the A-strand,

and the primer for elongating the B-strand;

(5) forming a hybridized product of a nucleic acid corresponding to the A-strand which has been elongated and amplified as a result of the PCR reactions and bound to the substrate and a nucleic acid corresponding to the B-strand which has been elongated and amplified and has not bound to the substrate; and

(6) detecting the base sequence to be detected by detecting the hybridized product in the respective primer-immobilized regions in the array.

2 to 4. (Cancelled)

5. (Previously Presented) A method of detecting a nucleic acid according to claim 1, further comprising a step of washing and removing a reaction solution on the substrate after the PCR reactions.

6. (Previously Presented) A method of detecting a nucleic acid according to claim 1, wherein the primer for elongating the B-strand is labeled, and the hybridized product is detected using the label.

7. (Original) A method of detecting a nucleic acid according to claim 5, wherein the label is a fluorescent dye.

8. (Original) A method of detecting a nucleic acid according to claim 7,

further comprising a step of observing the fluorescent dye using a confocal fluorescent microscope for detecting the hybridized product.

9. (Previously Presented) A method of detecting a nucleic acid according to claim 1, wherein the hybridized product is detected using a fluorescent dye as an intercalator or a groove binder which interacts with a double-stranded nucleic acid.

10. (Original) A method of detecting a nucleic acid according to claim 9, further comprising a step of observing the fluorescent dye using a confocal fluorescent microscope for detecting the hybridized product.

11 to 15. (Cancelled)

16. (Previously Presented) A method of quantitative determination of a nucleic acid based on signals detected according to claim 1.

17 and 18. (Cancelled)

19. (Previously Presented) A method of detecting a nucleic acid according to claim 1, wherein at least the PCR reactions and nucleic acid detections are performed in a form in which the primer arrays are present in the same container.

20. (Original) A method of detecting a nucleic acid according to claim 19, wherein the respective PCR reactions and nucleic acid detections are performed while observing intermittently using the same means.

21. (Withdrawn) An apparatus for detecting a nucleic acid, which enables the method of detecting a nucleic acid according to claim 19, comprising:

a PCR reaction container; and
detection means.

22. (Withdrawn) An apparatus for detecting a nucleic acid according to claim 21,

wherein said PCR container comprises a substrate having a surface with immobilized polymers, a reaction chamber and a temperature controlling unit,

wherein said substrate is transparent against wavelength used for detection

wherein said reaction chamber is facing to said surface,

wherein said temperature controlling unit is placed at a position not preventing operation of said detection means, and

wherein said detection means is placed on the side opposite to said surface in relation to said substrate.

23. (Withdrawn) A kit for detecting a nucleic acid, comprising a primer array; a PCR reaction reagent; and a nucleic acid detecting reagent, for performing the

method according to claim 1.

24. (Withdrawn) A kit for detecting a nucleic acid according to claim 23, wherein the nucleic acid detecting reagent is a fluorescent dye serving as an intercalator or groove binder which acts on a double-stranded nucleic acid.